



Australian Government

MEM19004 Handle and examine gemstone materials

Release: 1

MEM19004 Handle and examine gemstone materials

Modification History

Release 1. Supersedes and is equivalent to MEM19004B Handle and examine gemstone materials

Application

This unit of competency defines the skills and knowledge required to safely handle a variety of gem materials and examine gems to determine physical and chemical properties.

Emphasis is placed on knowledge of the principles of gemmology, gemstone and diamond nomenclature, gemstone processing enhancement and repair, and appreciation of gemstone qualities.

This unit applies to an individual working autonomously in a jewellery manufacturing environment and guided by strict rules of procedure.

Note: The competencies covered by this unit do not include the requirement to perform accurate and positive gemstone identifications.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Band: A

Unit Weight: 6

Pre-requisite Unit

MEM13015	Work safely and effectively in manufacturing and engineering
MEM16006	Organise and communicate information
MEM19003	Handle gem materials

Competency Field

Jewellery and horological

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
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1	Determine job	1.1	Follow standard operating procedures (SOPs)
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Elements describe the essential outcomes.

requirements

Performance criteria describe the performance needed to demonstrate achievement of the element.

		1.2	Comply with work health and safety (WHS) requirements at all times
		1.3	Use appropriate personal protective equipment (PPE) in accordance with SOPs
		1.4	Identify job requirements from specifications, job sheets or work instructions
2	Perform gemstone examinations and handle gem materials	2.1	Select examination methods and equipment appropriate to the gem material and examination requirements
		2.2	Prepare equipment and specimen
		2.3	Apply handling measures appropriate to gem material
		2.4	Identify the physical and optical properties of gem materials
		2.5	Record and verify examination results
		2.6	Prepare examination results and record conclusions with supportive evidence

Foundation Skills

This section describes those required skills (reading, writing, oral communication and numeracy) that are essential to workplace performance in this unit of competency.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Gem materials include one (1) or more of the following:

- natural (including diamonds)
- composite
- synthetic

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- imitation
- treated

Equipment includes one (1) or more of the following:

- 10x loupe tweezers
- refractometer
- UV light
- microscope
- thermal probes

Unit Mapping Information

Release 1. Supersedes and is equivalent to MEM19004B Handle and examine gemstone materials

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2>

Assessment Requirements for MEM19004 Handle and examine gemstone materials

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Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy the requirements of the elements and performance criteria on at least two (2) occasions and include:

- following work instructions, standard operating procedures (SOPs) and safe work practices
- selecting relevant tools and equipment to handle and examine gem materials
- setting up and safely operating equipment, including preparing, pre-setting, balancing, calibrating and levelling of equipment, for examination of gem materials
- undertaking numerical operations and calculations associated with handling and examining gem stones
- identifying relevant physical and optical properties of gemstones
- recording results and comparing results with known control items, charts, lists, graphs, diagrams and resource materials
- reading valuation documents, making comparisons and verifying outcomes
- selecting and applying handling measures and precautions in relation to gem materials, work processes, tools and equipment
- investigating and reporting examination results, including assessing need for further examination, cross referencing other records and cross referencing valuation documents.

Knowledge Evidence

Essential knowledge required to effectively handle and examine gemstone materials outlined in elements and performance criteria of this unit includes:

- safe work practices and procedures and use of personal protective equipment (PPE)
- examination methods for gem materials in relation to the properties and features that may affect specific materials during jewellery manufacture, repair or alteration
- equipment required for examination and the function of each
- limitations of the selected equipment and methods
- SOPs for selected equipment
- definitions of processes and features
- physical and optical properties and qualities of relevant gemstones
- principles of gemmology
- gemstone and diamond nomenclature

- process for verifying results
- handling measures and precautions for specific gem materials during jewellery manufacture, repair or alteration
- evidence used in support of conclusions.

Assessment Conditions

- Assessors must:
 - have vocational competency in handling and examining gemstone materials at least to the level being assessed with relevant industry knowledge and experience
 - satisfy the assessor requirements in the *Standards for Registered Training Organisations 2015* or its replacement and comply with the *National Vocational Education and Training Regulator Act 2011*, its replacement or equivalent legislation covering VET regulation in a non-referring state/territory as the case requires
- Where possible assessment must occur in operational workplace situations. Where this is not possible or where personal safety or environmental damage are limiting factors, assessment must occur in a sufficiently rigorous simulated environment that reflects realistic operational workplace conditions. This must cover all aspects of workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills
- Conditions for assessment must include access to all tools, equipment, materials and documentation required, including relevant workplace procedures, product and manufacturing specifications
- Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate

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